Volunteer Lake Assessment Program Individual Lake Reports

POST POND, LYME, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	8,320	**Max. Depth (m):**	11.6	**Flushing Rate (yr^{1})**	4.4
Surface Area (Ac.):	111	**Mean Depth (m):**	7	**P Retention Coef:**	0.43
Shore Length (m):	2,600	**Volume (m^3):**	3,132,500	**Elevation (ft):**	428

TROPHIC CLASSIFICATION

Year	Trophic class
1980	MESOTROPHIC
1997	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

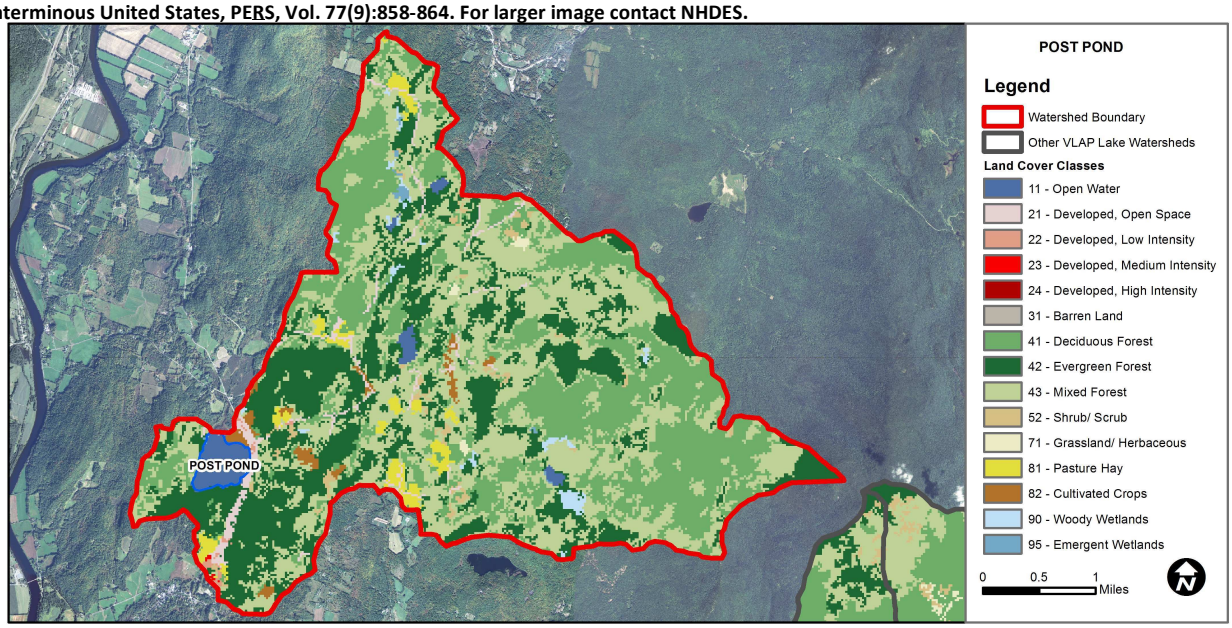
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Good	>/=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

POST POND - CHASE TOWN BEACH	E. coli	Bad	>/=1 exceedance(s) of geometric mean criterion and/or >/=2 exceedances of single sample criterion, with 1 or more >2X criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	1.87	Barren Land	0	Grassland/Herbaceous	0.21
Developed-Open Space	1.92	Deciduous Forest	28.68	Pasture Hay	1.94
Developed-Low Intensity	0.2	Evergreen Forest	26.1	Cultivated Crops	0.95
Developed-Medium Intensity	0.04	Mixed Forest	36.04	Woody Wetlands	0.78
Developed-High Intensity	0	Shrub-Scrub	1.08	Emergent Wetlands	0.19

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
POST POND, LYME, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low and have been much lower since 2010. Historical trend analysis indicates the chlorophyll level tends to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity values were slightly elevated and greater than the NH lake median. Chloride levels were low.
- **TOTAL PHOSPHORUS:** Hypolimnetic (lower water layer) phosphorus levels were elevated and turbidity was also slightly elevated indicating bottom sediment could have contributed to the elevated phosphorus. Epilmnetic (upper water layer) phosphorus was low and historical trend analysis indicates phosphorus levels tend to fluctuate from year to year.
- **TRANSPARENCY:** Transparency was good and higher than the NH lake median. Historical trend analysis indicates transparency tends to fluctuate from year to year.
- **TURBIDITY:** Turbidity levels were low at all stations except for the Hypolimnion. Hypolimnetic turbidity was slightly elevated indicating potential bottom sediment contamination.
- **PH:** pH levels were sufficient to support aquatic life, however have been at critical levels in the past.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer to better assess summer water quality and historical trends.

Dissolved Oxygen & Temperature Profile

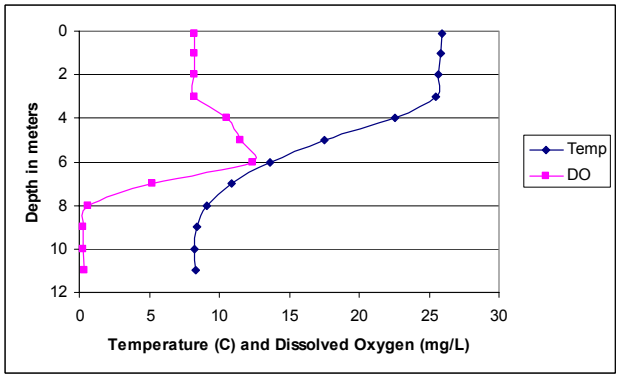


Table 1. 2012 Average Water Quality Data for POST POND

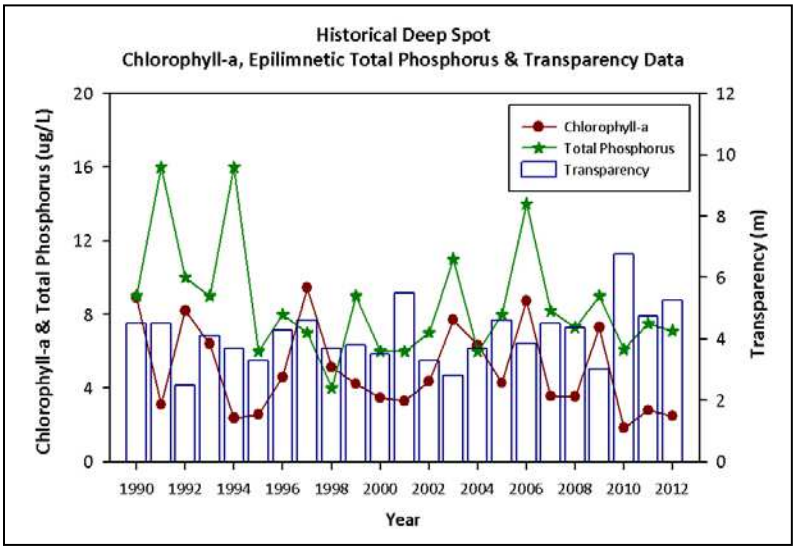
Station Name	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.	Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m	ntu	
						NVS		
Clay Brook Outlet				91.3	6		0.58	7.44
Deep Epilimnion	37.5	2.49	4	90.1	7	5.25	0.54	7.27
Deep Metalimnion				80.1	9		0.64	7.40
Deep Hypolimnion				93.1	24		2.79	6.50

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



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